



R20 Regulation

Subject code: 305FA

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

B.Tech V Semester Regular Examinations, January 2023

PRINCIPLES OF ELECTRONIC COMMUNICATIONS

(OPEN ELECTIVE)

(INFORMATION TECHNOLOGY)

Maximum Marks: 70

Date: 20.01.2023 Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks

(10x2M=20 Marks)

- 1 Define Frequency Translation.
- 2 The signal power at the input to a receiver is 6.2 nW and the noise power at the input to that receiver is 1.8 nW. Find SNR and SNRdB.
- 3 Write AM equation. Define modulation index, and percentage modulation.
- 4 Define PSK and QPSK.
- 5 Write about local loop in telephones.
- 6 State the effects on a satellite signal if the angle of elevation is too low.
- 7 Define what is meant by bandwidth as it applies to fiber-optic cable. What units are used to express bandwidth?
- 8 Differentiate LEDs and Laser Diodes with respect to performance characteristics.
- 9 Write about Infrared Wireless Technology.
- 10 List the operating frequency ranges of ZigBee and their maximum data rates.

Part-B

Answer All the following questions.

(10M x 5=50Marks)

- 11 Draw and describe the various frequency ranges in the electromagnetic spectrum with its applications [10]

OR

- 12 A. Explain the concept of frequency translation with suitable example. [5]
B. A power amplifier with a 40-dB gain has an output power of 100 W. What is the input power? [5]

- 13 Define PWM and explain the modulation process with neat diagram. []

OR

- 14 With neat waveforms Explain about
A. Natural PAM Sampling [5]
B. PPM [5]

- 15 A. Explain the working of Token ring with neat diagram [5]
B. Describe how repeaters, hubs, bridges, routers and gateways are used in LANs. [5]

OR

- 16 Explain about
- A. Electronic telephones [4]
 - B. Internet Telephony [3]
 - C. Paging System [3]

- 17 A. Explain about satellite sub systems. [5]
B. Describe the process for determining look angle. [5]

OR

- 18 A. Explain the block diagram of optical fiber communication system with transmitter and receiver. [5]
B. State the operative physical principles of launching a satellite and maintaining its orbit. [5]
- 19 Write short notes on the following (i) RFID Communications (ii) UWB (iii) GSM Architecture [3 + 3 + 4]

OR

- 20 A. Discuss about 3G standards – WCDMA/UMTS for wireless network [5]
B. What is RFID? What is the most recent version of RFID standards? State the Operating frequency range, advantages and benefits [5]